Clinical Trial Protocol
Iranian Registry of Clinical Trials

07 Nov 2026

Comparison of motor-cognitive dual task training and virtual reality based training effects on the attentional demands of gait initiation in older adults

Protocol summary

Summary

The main purpose of this study is to find which type of treatment (cognitive-motor intervention or virtual reality method) is more effective to improve the postural control of older adults. It is estimated 20 healthy older adults are sufficient for this study. The inclusion criteria for healthy older adults are the following: Age ≥ 65 years old, be free from any severe cardiopulmonary disease, neurological disorder, musculoskeletal impairment or any history of falls in the prior 6 months. Subjects are excluded from either group if had any dizziness, fatigue, vigorous physical activity or stress before testing. After baseline evaluation, subjects are randomly allocated to one of the two groups: (1) cognitive-motor dual-task training, (2) virtual reality based training. Cognitive-motor dual-task training is balance training while simultaneously engaging in a secondary cognitive task. Virtual reality based training is balance training in a virtual environment using programs of Wii fit. Participants in these groups are attended 12-16 sessions, 3 sessions per week, and 60 minutes per session. The outcome measurements take place at 3 time points: (1) before initiation of intervention (baseline), (2) after completion of training, (3) 8 weeks after completion of training. The outcome measurements are initial swing step time, initial stance step time, initial swing step time variability, initial stance step time variability, verbal reaction time, verbal reaction accuracy, and attention allocation index of these parameters.

General information

Acronym

IRCT registration information

IRCT registration number: **IRCT2015052022341N1**
Registration date: **2015-05-26, 1394/03/05**
Registration timing: **retrospective**
Last update:
Update count: **0**

Registration date

2015-05-26, 1394/03/05

Registrant information

Name
Roya Khanmohammadi
Name of organization / entity
Tehran University of Medical Sciences
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Iran (Islamic Republic of)
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Recruitment status

Recruitment complete

Funding source

Tehran University of Medical Sciences

Expected recruitment start date

2013-08-23, 1392/06/01

Expected recruitment end date

2015-05-26, 1394/03/05

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of motor-cognitive dual task training and virtual reality based training effects on the attentional demands of gait initiation in older adults

Public title

Comparison of motor-cognitive dual task training and

virtual reality based training effects on the attentional demands of gait initiation in older adults

Purpose
Treatment

Inclusion/Exclusion criteria
Inclusion criteria: Age ≥ 65 years old; BBS score >40; TUG score ≤20; ABC score ≥50%; MMSE score ≥24; HADS- depress subscale score ≤7; Have no severe cardiopulmonary disease, neurological disorder and musculoskeletal impairment; Have no history of falls in the prior 6 months Exclusion criteria: had vigorous physical activity before testing; had dizziness, fatigue, and stress during testing

Age
From **65 years** old

Gender
Both

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **20**

Randomization (investigator's opinion)
Randomized

Randomization description

Blinding (investigator's opinion)
Single blinded

Blinding description

Placebo
Not used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Research Ethics Committee of Tehran University of Medical Sciences

Street address
Central Organization of Tehran University of Medical Sciences, Qods St., Keshavarz Blvd.

City
Tehran

Postal code

Approval date
2013-08-03, 1392/05/12

Ethics committee reference number
130/888/92/د

Health conditions studied

1

Description of health condition studied
elderly

ICD-10 code
G31.1

ICD-10 code description
Senile degeneration of brain, not elsewhere classified

Primary outcomes

1

Description
Initial swing step time

Timepoint
before training, after completion of training, 8 weeks after completion of training

Method of measurement
foot switch sensor- software of Biometrics DataLog

2

Description
Initial stance step time

Timepoint
before training, after completion of training, 8 weeks after completion of training

Method of measurement
foot switch sensor- software of Biometrics DataLog

3

Description
Initial swing step time variability

Timepoint
before training, after completion of training, 8 weeks after completion of training

Method of measurement
foot switch sensor- excel software

4

Description
Initial stance step time variability

Timepoint
before training, after completion of training, 8 weeks after completion of training

Method of measurement
foot switch sensor- excel software

5

Description
Verbal reaction time

Timepoint
before training, after completion of training, 8 weeks after completion of training

Method of measurement
Recorder - Sound Forge Pro

6

Description
Verbal reaction accuracy
Timepoint
before training, after completion of training, 8 weeks after completion of training
Method of measurement
Recorder - Sound Forge Pro

7

Description
Attention allocation index
Timepoint
before training, after completion of training, 8 weeks after completion of training
Method of measurement
excel software

Secondary outcomes

empty

Intervention groups

1

Description
Balance training while simultaneously engaging in a secondary cognitive task. Participants in this group are attended 12-16 sessions, 3 sessions per week, and 60 minutes per session.
Category
Behavior

2

Description
Balance training in a virtual environment using programs of Wii fit. Participants in this group are attended 12-16 sessions, 3 sessions per week, and 60 minutes per session.
Category
Behavior

Recruitment centers

1

Recruitment center
Name of recruitment center
Rehabilitation Faculty
Full name of responsible person
Roya Khanmohammadi
Street address
Tehran-enghelab street- piche shemiran- Physical Therapy Department
City
Tehran

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Rehabilitation Faculty
Full name of responsible person
Dr. Saeed Talebian
Street address
Tehran-enghelab street- piche shemiran- Physical Therapy Department
City
Tehran
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Rehabilitation Faculty
Proportion provided by this source
100
Public or private sector
empty
Domestic or foreign origin
empty
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
empty

Person responsible for general inquiries

Contact
Name of organization / entity
Rehabilitation Faculty, Tehran University of Medical Sciences
Full name of responsible person
Roya Khanmohammadi
Position
Phd student
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Person responsible for scientific inquiries

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Rehabilitation Faculty, Tehran University of Medical Sciences

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Dr. Saeed Talebian

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Professor

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

empty

Study Protocol

empty

Statistical Analysis Plan

empty

Informed Consent Form

empty

Clinical Study Report

empty

Analytic Code

empty

Data Dictionary

empty